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The Nauru Island DXpedition took place from 28 September 2014 to 14 October 2014. It was finally realized after more than 10 months of preparation and with the incredible logistical support of my friends who have been living in Australia for many years—Olga (LZ1QG), Bozhana Gerova, and their families. The success of this DXpedition was significantly aided by the decisive information provided by Pista, HA5AO and Peter Ford, VK3TAN. Others that lent me

their whole-hearted support were Emil (DL8JJ), Virjy (DL9JJ), and Aves Kang (DS2AGH). These friends devoted a lot of their spare time and provided me comfortable shelter during my stays on the way to and from Nauru. They did their best to make me feel good in order to quickly recover from my long and arduous expedition. Their help was really important to me. Thank you, my friends!

The trip to Nauru Island and back was indeed long and heavy. I traveled around 30,000 km both ways on an airplane. The trip took me on the following route:

Sofia/Bulgaria to Frankfurt/Germany

Frankfurt/Germany to Seoul/South Korea

INDEXA

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C21GC Nauru Island—2014 **By Stanislav Vatev, LZ1GC**



A tired but happy Stan arrives at the Menen Hotel on Nauru after a few day's travel.

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inside... Disappearing Sunspots? K9LA Takes a Look

C21GC Nauru Island—2014 (con'd)

(Continued from page 1)

Seoul/South Korea to Brisbane/Australia

Brisbane/Australia to NAURU Island

On my way back from Nauru Island, my route was the same but allowed a one day stay at Seoul, South Korea and two days stay at Frankfurt, Germany—both stops allowed me some time for needed rest and recuperation.

This DXpedition was possible, and I hope you found it successful, due to the powerful support of many INDIVIDUALS, CLUBS, and CORPORATE SPONSORS. There were so many that it is impossible to name them all without missing anyone, but people interested in all sponsors who supported me before the DXpedition can find them on WWW.C21GC.COM under the SPONSORS tab.

Thank you to all INDIVIDUAL SPONSORS who supported me after the expedition with donations included with their QSL requests.

Thank you from the bottom of my heart to all. It is indeed delightful that I was also sponsored by some non-radio enthusiasts, such as SYLPA, LTD. and KONTRAX, LTD.--Bulgaria.

The beginning of the C21GC DXpedition began with my departure from Bulgaria on 24 September 2014.

On 28 September 2014 at 7:40am local time, after an extended and heavy travel period on a Boeing 737 airplane, I arrived at Nauru's airport. I was alone with 70kg of luggage—one pack with 2 pieces, Spider Fiberglass Poles, a box with an Acom-1011 linear amplifier, and one bag with wires and supporting cables for a EXP.GP antenna from 40-10m and GP for 160/80 meters.

The laptop bag which was on my shoulder weighed 13kg. In it there were a "Lenovo" laptop computer, a Kenwood TS-480SAT, a power supply and other accessories for the radio station, cables, and an RTTY modem.

Upon my arrival at the airport my passport was taken with the explanation that it was a normal procedure for arriving foreigners. The same was returned three days later. I received it from the local immigration authorities along with a visa permitting a

one month sojourn on the island. I was not worried that my passport was taken upon my arrival. I had been prepared with the facts that this was a standard procedure. Therefore, all my attention was focused towards reaching hotel MENEN where I had a reservation. I was mostly thinking of how to raise the antenna as fast as possible and begin working with the radio station.

It turned out that there are no taxis on the island. According to the information I had, the hotel was around 4 to 5km away from the airport. It was going to be impossible to reach it with 70kg of luggage and no transportation! I asked one of the airport employees if there was someone with a vehicle to drive me to the hotel. He immediately recognized my plight having seen my luggage and responded, "Wait, I'm going to call my colleague and drive you to the hotel with my car. It is a long way!"

This is a place where I should emphasize that locals are very polite, helpful, and friendly people. They are very sociable and conscientious.

With the help of the aforementioned employee I successfully reached my accommodations at the MENEN Hotel—room 109 which was reserved for me. As soon as I entered the room I unpacked my luggage and installed the equipment on a suitable table. The radio shack was ready.

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C21GC Nauru Island—2014 (con'd)



With the “shack” set up, I was yet to encounter the intense heat I would experience in setting up the antennas outdoors.

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Then I set out to prepare the multi band GP antenna for ranges 40-10 meters. After that, I laid out the 12 meter Spider fiberglass pole right at the beach situated around 15-20 meters away from my room. I prepared the guys and antenna wiring. It was ready to be raised! I hurried as quickly as I could but things weren't happening as fast as I had hoped!

I asked one of the locals, who was lying in the shade nearby to come and help me with raising the mast. Perhaps because of the hot climate, the locals are not very fond of working and like to enjoy themselves. To him my activities seemed interesting and he agreed to help me. His task was to step on the mast's base so I could raise it to the vertical.

IT WORKED!

We quickly raised the mast and I began to fix it in place with guy wires. The heat was sweltering. Perhaps that caused the rapid diminishing of my helper's enthusiasm. After he repeatedly stated that it was too hot, he headed back to his shade. He did help me enough, though. We had managed to raise the mast and secure it with three guys. I continued assembling the rest of the antenna parts. After three to four hours of continuous work, antenna installation was finalized with laying and connecting of coaxial

cable. It was really hot and humid outside but I couldn't pay attention to that fact. I immediately tested the antenna and concluded with gratification that it worked well on all bands it was intended for.



Do NOT allow the fleecy clouds and blue water to lead you to believe that erecting this antenna was anything but terribly “HOT” work!

I began transmitting on 7 Mhz at 06:57 GMT on 28 September 2014. C21GC was on the air!

My first contact was with G3XHZ. It was a huge Pile Up! For the first couple of hours I remained on different bands for 30-40 minutes with the purpose of testing the antenna and the propagation. During the first two to three hours I activated C21GC using both CW and SSB on all bands from 40 meters to 10 meters.

With almost no sleep and small breaks I aimed to be on all radio-enthusiast bands NON STOP from

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C21GC Nauru Island—2014 (con'd)

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06:57 GMT on 28 September to 16:05 GMT on 14 October 2014. During the first 3 days I transmitted on 40 to 10 meter bands for CW and SSB. On the fourth day I spent most of my time raising the antenna for 160/80 meters. Its building and adjustment took me around 4 hours. Once more this involved continuous work without any breaks under a blazing sun in sweltering heat. Temperature was 40° C in the shade. While I was building the 18 meter mast there was nobody outside. Even the dogs had taken cover to the shade! But what will not a radio enthusiast do in the name of his hobby?

I successfully adjusted the 160/80m antenna to an SWR of 1.0:1 on 3502 KHz and 1.1: 1 on 1822,5 KHz. I was pleased with myself! It felt great. At that moment I felt neither heat nor hunger. I did not feel the need to sleep despite the fact that for the past three to four days I had allowed myself no more than 6 to 7 hours of sleep!

Please, understand me correctly—I felt it was irresponsible, an actual crime, to go on a DXpedition to Nauru and sleep! There were times when my eyes would involuntarily close due to the need to sleep but I kept on working on different bands. My wrestling with lack of sleep was not easy. I took frequent cold showers as well as drank coffee and tea to help me stay awake. Alas, there were times when my mental sharpness suffered.. For example, one of those moments was when I was about to respond to someone who was calling me and in the next minute, I had difficulties inputting his callsign into the computer. Only then did I allow myself 2 to 3 hours of sleep.

Another troublesome moment during my C21GC activity was an encounter with a pack of four to five dogs. These dogs were chewing the radials on the 160/80m antenna every other night, leaving torn pieces of it lying on the ground. I had to repair the radials at 2:00 to 3:00AM local time by splicing and straining under the attacks and barking of that pack of dogs. First night was the toughest—the first battle with them. While working on 160m I noticed the antenna's SWR suddenly became larger. I quickly ran outside to check the antenna and was surprised by the dog pack. I was naked from my waist up, wearing only my short pants and being bare handed! The dogs tried to

surround me, kept on barking and attacking! They were around 1.5 to 2 meters away from me. I managed to instill respect by kicking their leader in the head! It was a good hit in the right place! Luckily I managed to grab a nearby plastic tube around 2m long. I instilled further respect by swinging the tube, and it all ended well. I repaired the two damaged radials within 10 to 15 minutes. The dogs kept on barking and growling at me, but I was “armed” and they did not approach any closer than 10 meters.

It was easier during the following nights because I carried the same tube with me and the pack kept their distance. Truth be told, in the times when I had to repair the radials, not dogs nor even a lion could keep me from repairing my antenna!

From 28 September until 14 October 2014 C21GC conducted 23,500 QSOs from 160 to 10 meters, on CW, SSB and RTTY. I disassembled the 160/80 antenna four hours before checking out and seven hours before my return flight—again alone, under extreme conditions. This time, however it was early in the morning local time. Before leaving the hotel I prepared and packed my luggage.

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One of the few beautiful sunsets I observed only because I actually took a few minutes break from operating to capture the view.

C21GC Nauru Island—2014 (end)

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On 15 October 2014 at 14:35 Nauru time I left Nauru Island on a Boeing 737 of Nauru Airlines, after 16 days of almost continuous activity on amateur radio bands, CW/SSB and RTTY.

On the island I left both Spider fiberglass poles, 100 meters of Coaxial cable and around 300 meters of guy ropes for the only local radio amateur--Darkey, C21DJ. Unfortunately, he has not been QRV for the past 10 years since lightning damaged his FT-757 GX and TL-922. In writing these final lines I'm thinking it would be a good thing if we could mobilize an effort to help get him equipment so there would be at least one active radio-enthusiast on Nauru. I am ready to travel to Nauru again and bring equipment which he can work with, but it is very hard to realize it in terms of finance point of view. I was ready to leave a TS-480SAT and a ACOM-1011 which I used while working on Nauru, but unfortunately that equipment did not belong to me. The TS-480SAT transceiver was given to me by LZ3GA for this expedition while ACOM-1011 was loaned to me by ACOM, LTD for this DXpedition only.

Perhaps a lot of radio amateurs would ask me what had impressed me the most during this DXpedition. I will never forget the moment I received a C21GC radio license and the long and friendly conversation I had with Mr. Criden Appi, Director of Telecommunications and Regulator of Nauru. I will never forget the friendliness of local residents I had contact with during my sojourn, but most of all I will always remember the unforgettable hours and days I spent transmitting as C21GC. I will remember for a long time the wonderful QSOs with Jan (DO2AT) on 15 meters, Neil (G0JHC) on 80 meters, and SM3EVR on both 80m and 160m. All QSOs with my good friends JG1UKW, F5UKW, OM3PC, LB2TB, LA7DFA, OE4VIE, DJ9ZB, DJ8NK, W3YX, K6MKF and many, many others will also remain unforgettable.

As an ending to this article I would like to say that C21GC DXpedition 2014 is history, but I hope it left a lot of lasting good memories for you!

Once again, I thank everyone who supported me and were empathetic so I could accomplish this DXpedition!



Receiving my C21GC Amateur Radio License from Mr. Criden Appi, Director of Telecommunications and Regulator of Nauru was probably the highlight of this venture. While it may seem a simple event for many, to me it was the culmination of an effort to get to Nauru and the beginning of an effort to work as many radio amateurs in the world as I could in my allotted time. Bring on the PILEUPS!

--73! *Stan*

LZ1GC, C21GC, 3D2GC—Fiji & 3D2GC/P—



Waterfront at low tide.

An Update on Disappearing Sunspots

Carl Luetzelschwab K9LA

Carl Luetzelschwab, K9LA, received his Novice license WN9AVT in October 1961, and selected K9LA in 1977. His interests in Amateur Radio include DXing (Top of the Honor Roll), propagation (an interest that began in his college days), contesting (NCJ Editor from 2002-2007), antennas, and vintage radios. Carl is a life member of **INDEXA**, and contributes articles on propagation and solar topics to the various Amateur Radio publications. He received a BSEE in 1969 and MSEE in 1972 from Purdue University, and retired in 2013 as an RF design engineer, first for Motorola for 14 years and concluding with Magnavox/ Raytheon for 25 years. Carl and his wife Vicky, AE9YL, have been on the DX side as YK9A (2001), OJ0 (2002) and while on many trips to ZF. --John Scott, K8YC, Editor

The July 28, 2009 issue of EOS (the weekly newsletter of the American Geophysical Union), contained a short article by solar scientists W. Livingston and M. Penn titled “*Are Sunspots Different During This Solar Minimum?*” The general thrust of the article was that the trend line (a running mean) of the maximum magnetic field strength of sunspots areas declined from about 3000 Gauss in early 1992 to about 2100 Gauss in early 2009. Figure 1 shows this data.

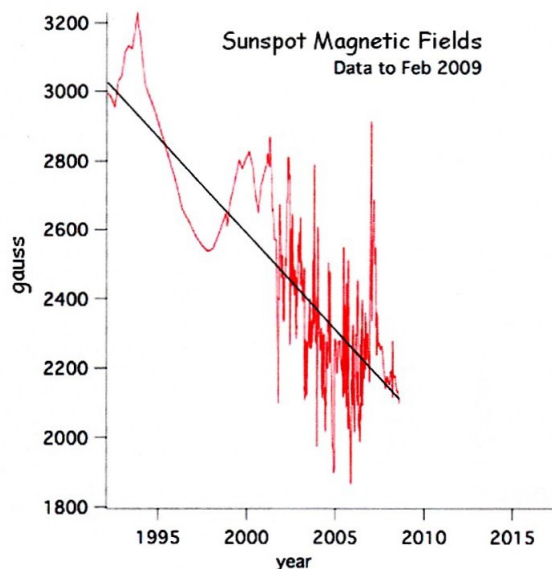


Figure 1 – Original Data

Coupled with the fact that sunspots won't be seen when the field strength is below 1500 Gauss, Livingston and Penn postulated that we won't see any sunspots after about 2015. This last sentence gave rise to the phrase “disappearing sunspots” that was reported on extensively—and fueled speculation that we're headed into another Maunder Minimum, which was a 70-year period from 1645 to 1715 in which there were few sunspots.

This article in EOS was actually a brief summary and an update of Dr. Livingston and Dr. Penn's original paper that appeared in a September 2006 issue of *The Astrophysical Journal*, the title of which was “*Temporal changes in sunspot umbral magnetic fields and temperatures*”. Included in this original article is the explanation of how the magnetic field strength of a sunspot area is measured (google ‘Zeeman effect’ for more information).

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Dr. Leif Svalgaard of Stanford University updates the Livingston and Penn data on his web site at <http://www.leif.org/research/> in item H. Figure 2 is the latest update (data through mid-2015). Note that the vertical and horizontal scales for Figure 1 and Figure 2 are different, which makes the downward slopes look different – but they aren't.

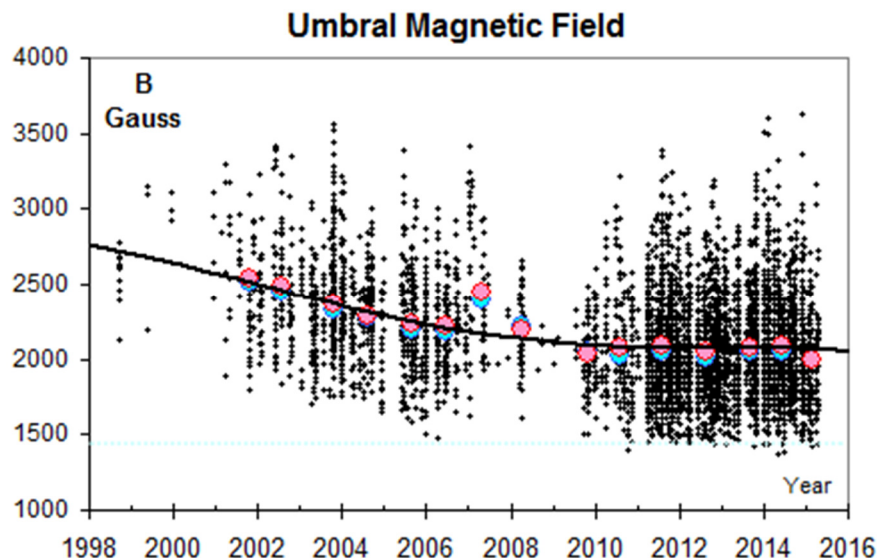


Figure 2 – Latest Data

The data shows that the declining trend has appeared to stop, and in fact is holding steady. What this suggests is we may not be entering another Maunder Minimum period—which assumes a Maunder Minimum is not being able to see sunspots due to the magnetic field strength going below 1500 Gauss. We may just be entering an extended period of smaller solar cycles (there is lots of evidence for this).

I can't stress enough that all of this is speculation—we need more data. And we'll get more as we monitor what happens in the next 10 to 15 years. This will encompass the decline of Cycle 24 thru Cycle 25 maximum.

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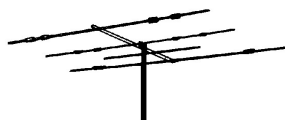
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